





With the Author's Compl.

# ON VACCINATION:

*A CRITICISM OF*

PROF. CROOKSHANK'S BOOK.

BY

THOS. WHITESIDE HIME,

A.B., M.D., &c.

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# ON VACCINATION:

*A TREATISE ON*

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## CROOKSHANK ON VACCINATION.

BY THOS. WHITESIDE HIME, B.A., M.D., BRADFORD,

AUTHOR OF "HANDY GUIDE TO THE SANITARY ACTS: FOR MEDICAL OFFICERS OF HEALTH;" "CHOLERA: HOW TO PREVENT AND RESIST IT," ETC.

THESE two ponderous volumes turn the scale at fourteen pounds! Considerable weight is also attached to the name of the author, as one who has won an honourable position in the modern forms of pathological research, amid the realms of "the infinitely small," and as a most industrious and painstaking investigator. Indeed, one of these volumes is in itself a monumental proof of the fanatical zeal with which Professor Crookshank will devote himself to an adopted task, a task in our opinion of the most fruitless kind, unworthy of the author, and more suitable for a junior clerk than a professor of pathology. I refer to the comparison instituted between the published version of Jenner's celebrated pamphlet, "The Inquiry," and the unpublished version of the same which Professor Crookshank discovered *perdu* in a drawer in the library of the College of Surgeons. He has found out and carefully noted that the published version in one place has the word "seems," instead of "seem," the reading of the unpublished version; in another place "commonly" is used, instead of "frequently"; in another "were," for "was"; in another "maids" for "maid-servants"! We fear that the reader would ill requite the labour of further illustrations of this *furor couferendi*. Why should Jenner not enjoy the liberty claimed and exercised by every scribbler, great and small, of correcting his first lucubrations, or, if he preferred it, of re-writing the whole? The late Dean Stanley produced his model and classical writings by a process of correction and emendation, repeated time after time in the case of the apparently most trivial words, until he came to be the terror of the printer. It would be a lucky thing for the civilized world if the glorious company of men of the quill would sin a little more as Jenner did in the way of emendation. *Sæpe stilum veritas* is a venerable maxim, as deserving of recognition now as in the time of Horace.

But herein lies the true secret of Professor Crookshank's industrious collation of the two copies of Jenner's "Inquiry."

Jenner chose to correct his pamphlet before it was published; he changed the title, he changed "was" to "were," he altered "seem" to "seems," and did not hesitate even to sacrifice "that blessed word *the*!" In doing so he has committed a heinous crime in the eyes of Professor Crookshank; the trail of the serpent is recognised by him as meandering amid these "weres" and "buts," and "maidservants," and although he is unable to point as yet to the abomination of desolation to which it all undoubtedly must lead, still the Professor holding the clue, is hopeful that he may yet unravel the mystery of these alterations, and display Jenner in all his naked guilt.

Here is the key to Professor Crookshank's work. He feels he has a mission to show that Jenner was little better than an ill-educated and shallow-minded impostor; that his vaccination has been foisted on the world without any sufficient grounds, and has grown to its present position of universal recognition by the chicanery of successive generations of men, largely knaves and partly fools. And yet the medical world is more unanimous as to the benefits conferred by vaccination than on any other subject. Politicians, too, have made universal vaccination compulsory in almost every civilised land. As practical men, they were only concerned with the question of benefits to be derived from vaccination, and it has been reserved for the Professor to devote part of his "Pathology of Vaccination" to questions of a purely personal character. But is it conceivable that knavery and fraud could have induced this consensus of opinion? No: to believe this would be far more difficult to an unprejudiced person than to accept the proofs that vaccination is a protective against small-pox. Like all those intractable mortals who work for their "conscience sake," and "in obedience to a higher motive," Professor Crookshank is so overpowered by the belief in his "call" that he has been unable to produce a work either worthy of himself, or in any way conducing to the solution of the many questions of great scientific and practical interest which are centred around vaccination. Not a moment is found to consider what are after all *the* questions in which everyone is interested—viz., does vaccination afford any protection against the attacks of small-pox? or does it render deaths less numerous amongst the vaccinated who are attacked?



If not, what is the meaning of the facts, for facts they are, that in innumerable instances, isolated, as well as aggregated in epidemics, vaccinated persons have not been attacked, and have not died from small-pox at the same rate as the unvaccinated; and have, in fact, enjoyed such a degree of immunity that the protection has been generally attributed to the fact of vaccination, as no other quality could be found to differentiate those who escaped the disease from those who did not, except the quality of being vaccinated? Why were only 15.5 per 1,000 vaccinated persons living in Sheffield attacked by small-pox (1887-8), while 97.0 out of every 1000 of the unvaccinated were attacked? How was it that the proportion of vaccinated persons who died there was only seven, while of unvaccinated it was no less than 480 per 10,000 living in each class; while of the vaccinated persons attacked by small-pox, only 4.9 per 100 died, as against 32.6 of the unvaccinated? These are not theories, but facts, which call for explanation.

If vaccination is a useless procedure as against small-pox, how can Professor Crookshank account for the remarkable facts (not theories) reported by Körösi<sup>1</sup> with regard to the results of vaccination among the population of ten Hungarian towns, with nearly three-quarters of a million inhabitants, including 20,306 deaths, shown in the following table :<sup>2</sup>

	Deaths from Small-Pox.		Deaths from other diseases.	
	Number.	Per cent.	Number	Per cent.
Aged above one year, 14 678	1,305	8.8	13,373	91.2
Vaccinated ... .. 10,242	239	18.3	10,003	74.8
Unvaccinated ... .. 2,893	1,054	80.8	1,839	13.8
Doubtful ... .. 1,543	12	0.9	1,531	92.8

<sup>1</sup> Körösi: Kritik der Vaccinationsstatistik und neue Beiträge zur Frage des Impfschutzes. Berlin, 1890.

<sup>2</sup> The deaths under one year have been deducted to test the truth of the anti-vaccination argument, that the excess of deaths among the unvaccinated is due to the fact that only healthy children are vaccinated; whilst the weakly and diseased infants are not vaccinated, and dying at a high rate from various diseases cause the excessive mortality among the unvaccinated. The above table proves that this familiar argument is quite groundless, as the mortality among the unvaccinated is enormously in excess of that of the vaccinated if the deaths under one year be omitted entirely.

Here we see that although in the case of all diseases except small-pox the great majority of the deaths is of vaccinated persons, corresponding to the proportion of vaccinated persons in the population, with small-pox it is just the opposite. Of the 2,893 unvaccinated persons only 1,839 (13 per cent.) died on the many routes which lead to Hades (excluding that of small-pox, but including that of suicide and accidents !); while on that of small-pox alone no fewer than 1,054 died, or 80.8 per cent., against 13.8 per cent. from all other causes.

Again, those persons who deny that vaccination has any effect in influencing small-pox are bound to give some explanation of the undeniable fact that whereas small-pox has always, in times past, as well as present, found its most ready victims among unvaccinated children, when the children are vaccinated they escape it, and it is the adults who are attacked; their susceptibility being in a general way directly proportioned to the length of the interval which has elapsed since their vaccination. Why should all children be more susceptible to small-pox than adults, except those children who happen to be vaccinated? Surely here was a question far more worthy of the critical acumen of Professor Crookshank, than investigating whether the first edition of the "Inquiry" had a "but" in the third line from the bottom of a certain page! Indeed, Professor Crookshank was bound to investigate and answer these and kindred questions, and not to leave such crucial points untouched in a volume of 466 pages, entitled, "A Critical Inquiry." Again, one naturally expected to find some experimental researches as to the intimate pathology of vaccinia; and to find, if not some conclusive original work on the nature of the vaccine virus, at least some suggestive passage on its microbic or chemical nature. Vain delusion! Prof. Crookshank has no time for such subjects. He did find leisure to discover why Jenner preferred to seclude himself in the country on a certain occasion. It was not, he tells us, to enjoy rural retirement, but "because he knew that his theory would be rigidly tested in London, and he was not prepared to face failures" (Vol I. p. 142). The discovery of this ignoble motive, it may be remarked, is without any shadow of foundation. Professor Crookshank gives no evidence with regard to it, he merely assumes it; and I have no

hesitation in saying it is as unreal, as the statement is unworthy of a high-minded gentleman, or of an author with any pretensions to scientific acquirements.

After vainly searching for answers to the preceding capital points concerning vaccinia and vaccination, I hurried over the pages (the 1076 pages have no index!) in eager expectation of finding another very important question thoroughly investigated and solved, with that fulness which recent scientific research places in the hands of a skilled experimenter. I refer to that most interesting question of the pathological relationship between variola and vaccinia. Everyone has asked himself how and why vaccinia should modify variola. Many believe it is because the two diseases are identical in origin, vaccinia being merely small-pox attenuated by passage through the cow, just as Pasteur attenuated the rabic virus of the dog by passage through monkeys in series, and intensifies it by passage through rabbits in series; and as the same great genius modified (attenuated) the virus of Rothlauf of swine by passing it through rabbits, so as to render it harmless and protective to pigs against the strong spontaneous virus. Ceeley, Badcock, and others claim to have demonstrated experimentally the variolous origin of bovine vaccinia. After variolating the cow they took the matter from the pock, and by inoculating it on children they claim to have produced genuine "vaccinia" in them. Here was a field worthy of the Professor of Comparative Pathology! a soil thick-set with questions calling for solution, questions of interest to almost every civilised man and woman; a soil rich in the hitherto "unearned increment," which awaits the touch of an investigator worthy of the task. But Professor Crookshank has not troubled himself to solve these all-important and still vexed questions. He does not think it unbecoming to rely for a solution of them on the somewhat musty Report of the Lyons Commission, "attenuated" by the lapse of five-and-twenty years!

He considers the subject sufficiently dealt with, when he declares, *ex cathedra*, (vol. I., p. 305) "I agree with Chauveau." What one would like to know is, why he does so? Has he kept back any experimental or other proof that Chauveau is right, or does he, as seems too likely, merely judge by the statements of Chauveau, as any other reader of them might do? It is manifest that Prof. Crookshank has

made no experimental researches to test this all-important question, notwithstanding the facilities he has, and that he has no knowledge whatever of the subject, except what he has picked up from very limited reading. His announcement that he agrees with Chauveau, and the Lyons Commission does not, therefore, add the smallest value to Chauveau's Report, nor give the reader of this book one additional crumb of information; except that Professor Crookshank is satisfied to swallow such reports, instead of testing their value; and having done this himself he cheerily asks his readers to bolt his own second-hand opinions. If Chauveau is right, and if *all* variolated bovines have acquired unmodified small-pox pure and simple; and if all persons inoculated from these animals have been "variolated," and not vaccinated, how comes it that they have not spread their disease by infection, except in the unfortunate cases referred to by our author, and possibly in another case not alluded to by him? That the first generation of variola-vaccine should sometimes be insufficiently attenuated for use as a "vaccine" is not improbable, and that it should be so would be quite in accordance with known facts in the history of other kinds of virus—*e.g.*, the first culture, in the monkey, of canine rabic virus is but little attenuated, just as the first passage through the rabbit is not appreciably intensified. It requires several "passages" through both animals to modify the canine virus. These facts prove that vaccination is closely analogous to some of the established facts discovered by Pasteur, which Professor Crookshank expressly says it violates. That the above is the true explanation of Chauveau's experiments seems highly probable when we compare all the facts with those recorded of Ceeley's cases, and of others inoculated with early removes of variola-vaccine.

Not less than hundreds of thousands of children must have been directly or indirectly inoculated from animals thus variolated. All these children are dogmatically declared by Professor Crookshank to have been variolated, and not vaccinated—*i.e.*, not cow-poxed; and yet, if so, their variola has not behaved like other variola, and spread by infection; nor has it killed its victims, as inoculated variola undoubtedly sometimes does; and, stranger still, those who have inoculated them and examined them at



every stage of their illness—skilled medical men and public vaccinators—declare that they have not been variolated, but vaccinated, and that the pocks on their arms were typical vaccine pocks! Professor Crookshank says it was small-pox. Those medical men speak from their personal knowledge of the phenomena they have seen: Professor Crookshank speaks dogmatically from the book. “Choose ye whom ye shall believe.”

I have referred to the want of knowledge shown by Professor Crookshank of recent German work on the subject of his book. It would have been better had he avoided the only important reference he has made to it, as he would then have escaped from what seems a very serious—nay, unpardonable blunder, one for which a full explanation is called for, as will be shown further on.

But the opinion shared by Professor Crookshank with Chauveau as to the non-identity of variola and vaccinia lands them in a dilemma, from which no one has yet shown a means of escape.

If the identity or origin of variola and vaccinia were established, of course Professor Crookshank would be placed in a still greater difficulty than he is in when, assuming that vaccinia is not modified variola, he sneers at the “myth” which declares it protective against a disease different from itself, for he would then be obliged to prove that vaccinia (being modified variola) does not protect against unmodified variola, which is contrary to what should be expected. It is passing strange, indeed, that one versed in Bacteriological Pathology should find an insuperable difficulty in the supposition that one virus may prove protective against a different one. This very question, irrespective of vaccination, has occupied pathologists largely since the exact nature of the virus of some diseases has been known; and many authorities hold that there is every prospect that protective inoculation founded on this very principle may yet be a fruitful instrument in the hands of the scientific physician. Bouchard, one of the highest living authorities, says “one disease can protect against another one,” and believes that it may even do so against a third<sup>3</sup>. The results obtained by Emmerich in using the *Streptococcus* of Erysipelas, as a protective against anthrax; and of Palowski with the pneumococcus of Friedlander against the same

disease, give great hope of future success in this line, and they certainly deprive Professor Crookshank of any license to jeer at those who think that vaccinia, even though different from variola in its origin, may still protect against it.

The experiments of Hüppe and Wood in the same direction are still more important. They employed a saprophytic microbe—found by them both in the ground and in water—as a protective against anthrax. Mice, treated by injections of this microbe, they found were rendered entirely refractory to injections of anthrax, even when repeated several times. The same effect was found to be produced on rabbits and guinea-pigs; so that they were justified in claiming that they could protect animals against one disease by employing as a protective a microbe entirely different from that of the disease they wished to prevent.<sup>4</sup>

The analogous results obtained in the wholesale way, by the employment of a microbe of one kind to destroy an epidemic disease of vegetables, caused by an entirely different organism, is deserving of being noted here. The crops of beet-root, the growth of which is an important industry in the department of Kief, suffer great destruction at times from disease due to attacks of a coleopter, named *Cleonus punctiventris*. This destructive creature is itself susceptible to the attacks of a minute fungus, called the *Isaria destructor*, which slays it at every stage of its development, whether in the egg, or as larva, nymph, or perfect insect. Pure cultivations of the spores of this fungus were prepared at a station established near Sméla, under the auspices of Professor Metschnikoff, for the purpose, and were subsequently applied to the soil mixed with manure or sand. The destructive *Cleonus* was attacked by an epizootic (caused by the fungus), with the result that from 55 to 80 per cent. of the destructive insects were killed. In a word, an epidemic disease was artificially and intentionally produced among those organisms which destroyed the beet-root; and the cause of the disease having been removed, the plants were saved.<sup>5</sup> But it must be remembered, after

<sup>3</sup>Thérapeutique des Maladies infectieuses, par Bouchard, Professeur de Pathologie et de Thérapeutique, Membre de l'Institut, etc. Paris, 1889.

<sup>4</sup>Berliner Klin. Wochenschrift, 1889, No. 16. See also "Annales de l'Institut Pasteur," Tome iii., No. 5.

<sup>5</sup>Bulletin Scientifique de la France et de la Belgique, 1888.

all, that the question whether vaccinia ought or ought not theoretically to protect is mainly one for idle disputants. Enormous experience proves that, as a fact, it does do so.

Having accepted Chauveau's opinion that variola inoculated on the cow produces only variola, and not vaccinia, Professor Crookshank has no scruple about pulverising Ceeley, Badcock, and others, who declare they succeeded, where Chauveau failed, and that they obtained true vaccinia by variolation of the cow. The most recent experiments in this line, those of Dr. Voigt, of Hamburg, are evidently quite unknown to our author except by distant echo. Manifestly, he has not read Voigt's writings on the subject, otherwise it is impossible that he could so utterly mis-state his experiments and experience. By way of giving the *coup de grace* to the theory of the variolous origin of vaccinia, Professor Crookshank states that Voigt was obliged to abandon the use of his variola-vaccine, which he had continually used since 1886, and assigns as "probably the reason" for this, "the true variolous character of variola-vaccine, and the tendency, in less early removes (*sic*)<sup>6</sup> to produce small-pox." This he states on the authority of M. Layet, of Bordeaux.<sup>7</sup> It will strike the reader as remarkable, that a gentleman in Bordeaux should be quoted as an authority as to experiments going on at Hamburg rather than the published writings of the experimenter himself, but it must prove astounding to learn that the whole story is utterly without foundation. Having myself, in 1889 (when travelling with a view to study foreign methods of cultivating calf-vaccine), visited Hamburg to see Voigt's vaccination station (which Professor Crookshank has not done), having seen his vaccinations, which produce typical vaccine pocks, having used his vaccine both on calves and children with the same result, I had also the verbal assurance of Voigt himself that it was his true variola-vaccine. On reading Professor Crook-

<sup>6</sup> Had the more early removes been referred to the meaning would at least have been intelligible. What is meant by a "tendency" is not stated.

<sup>7</sup> M. Layet goes a step farther than this in his work, *Traité pratique de la Vaccination Animale*, 1889. There he not only states that Voigt has abandoned his variola-vaccine, but he even ventures to name the vaccine which he has adopted instead of it—viz., "vaccin de genisse originaire de l'Institut Vaccinal de Rotterdam" (p. 107)! Could anything be bolder?

shank's statement as to what the gentleman in Bordeaux told him, about Voigt having been obliged to abandon his variola-vaccine, I wrote to Voigt and asked him if the statement was true, and his reply is that it is untrue, and that he has never abandoned the use of his variola-vaccine since he obtained it in 1881; and consequently Professor Layet's statement and Professor Crookshank's are utterly unfounded, and Professor Crookshank's "probable reason" why he did abandon it, is as deserving of consideration as many other reasons in his book.

The animus of our author against every aspect of Jenner's character, life and work, really seems to have quite obscured his judgment, and this must in charity be assumed as the cause of the aimless attacks he makes on him. Not content with discovering a crime in the fact that Jenner had actually dared to correct the text of the original "Inquiry" before publication, Professor Crookshank discovers another criminal mystery in Jenner's statement that bad vaccination in his time was due to the use of matter from spurious cow-pox. "I wish to insist," he says, "upon the gradual assumption of the existence of a spurious cow-pox. . . . Jenner alone was responsible for assuming the existence of two kinds of cow-pox, a true and a spurious" (vol. i., p. 278). Can anything be more natural than that Jenner should learn by experience that various eruptions might exist on the teats of cows, and should insist that only one of them was true cow-pox? And will any one who has read the Reports of Professor Klein to the Local Government Board, and the squabbles of Professors Crookshank, Klein, and others, as to the Hendon and other such diseases, or even seen the "Report on Eruptive Diseases of the Teats and Udders of Cows," to which Prof. Crookshank contributes, cease to wonder at the difficulty raised by him on this point, or at the view which represents Jenner as playing the impostor, because he impressed on all that there is a true and a false cow-pox, and urged the necessity of using only the true cow-pox if they wished to get typical results! In the year 1887, Professor Klein expresses the opinion "that the name 'spurious cow-pock' has in all probability been used to cover a variety of sores having essential differences" ("Report to the Local Government Board). Indeed, there cannot be a doubt that there are many kinds of eruptions which



appear on the teats of cows, resembling—while entirely different in nature from cow-pox—a multiplicity of eruptions which undoubtedly existed in Jenner's time also, and made his warning very necessary.

On the very frontispiece of his book Prof. Crookshank has displayed, as an illustration of his feelings towards Jenner, the portrait of Mr. B. Jesty, a worthy Gloucestershire farmer, intending that he should have the place of honour as the founder of vaccination, universally given to Jenner. A portrait of Mrs. Jesty also adorns the work, though probably no one would be more astonished than the good lady herself were she to learn this fact, and no one would be less able to give any grounds for the honour done her. Just as Prof. Crookshank accepts without proof the teaching of Chauveau, so he has adopted the view of the average anti-vaccinator, that all that is wanted to stamp out small-pox are good sanitary arrangements, notification, and small-pox hospitals, and—*credat Judeus*—inoculation with small-pox itself! Have sanitary arrangements ever prevented small-pox? If they can do so, how comes it that even among those actually living in the same houses small-pox invariably deals lightly with the vaccinated, while it deals as heavily with the unvaccinated to-day as it did before sanitary science had even a name? Our knowledge compels us to say that sanitary arrangements are utterly insufficient; but we are entirely in the dark as to the reasons, if any, which make our author differ from us, because he gives none, but merely makes the assertion.

Will notification ever enable all cases to be discovered before the infection has extended? Has notification up to the present proved itself able to stamp out scarlet fever, or small-pox, or any infectious disease? I know of no facts which prove it to have done so, although assertions, unsupported by facts, to that effect are numerous enough. Will small-pox hospitals ever be universal, and if provided everywhere, will they cease to be themselves a source of danger? How is the "rigid isolation," regarded as so important by the author, to be effected? Will variola, in the future, be more easily caged within walls than in past time? And what are we to do while waiting for the universal establishment of hospitals and good sanitary arrangements.

But the climax of the author's work is to be found in the

fact that he advocates that those in contact with small-pox cases should be inoculated with small-pox itself as a protection! A dozen cases occur in as many households, and straightway he would produce a dozen whole families all suffering from small-pox! He objects to inoculation of cow-pox, which certainly does not kill, nor spread by infection, and advocates inoculation of small-pox, which undoubtedly may kill, and certainly did, when practised, lead to a great extension of small-pox by infection from the inoculated persons, and which he must or should know offers no absolute protection against small-pox. Such is the fitting finale of this book.

Beginning with needless attacks on Jenner—which are absolutely foreign to the subject of his book—it encourages the belief that the wonderful success of Jenner's theory was due to very unworthy motives on the part of the medical profession of Jenner's time and since. The perversity of the medical profession in not adopting other views even to-day, is the ground for remarks not very complimentary to the profession Professor Crookshank must feel it a doubtful honour to belong to. I am happy to think we have here the best book the anti-vaccinators can produce. No person occupying such a position as Professor Crookshank has ever published such views as those in his book. One must regret it is not a much better book. Professor Crookshank has not touched one of the great problems with regard to vaccination which still remain to be solved. He has not done one original experiment as to vaccination, and he has grossly misrepresented, in one instance, the original work of others. I have given so much space to my notice of his book, wishing to give as much information as possible regarding it to the readers of the *PROVINCIAL MEDICAL JOURNAL*, and because I—in common with almost every medical man in practice (which Professor Crookshank evidently is a stranger to)—regard the success of vaccination as a great fact, and vaccinia as one of the most interesting of the "protective" diseases from which so much may be expected in the future.







Sept. 18. 1891.



